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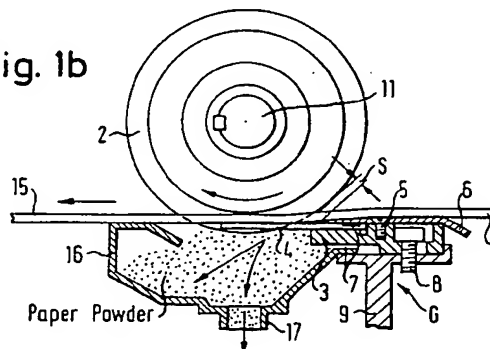
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(54) **Disc-shaped knife rotary cutter.**

(57) The improved rotary cutter performs cutting by making a knife edge portion of a rotating disc-shaped knife (2) bite into a surface of a sheet (1) being successively fed. On the underside of the traveling sheet (1), a brush (4) consisting of rod-shaped brush elements is fixed on a backing table (3) between point A and point B over the entire region in the lateral widthwise direction of the sheet (1), a knife edge of the knife (2) is disposed close to a front end portion of the backing table (3), upon transfer of the knife in the lateral widthwise direction of the sheet the knife is raised to be disengaged from the brush and the sheet and then it is transferred and set in position. Thereafter, while the knife is being rotated, it is lowered to be engaged with the sheet and again cuts the sheet. In addition, paper powder produced as a result of cutting a sheet is removed by providing a suction box (16) extending over the entire region of the maximum lateral width of the sheet right under the disc-shaped knife (2).

Furthermore, grindstones (26,27 and 29) for grinding the knife edge of the disc-shaped knife are provided so as to be movable in the axial direction of a shaft (11) of the disc-shaped knife (2), and in addition, there is provided a felt (34) immersed in soapy water for peeling off paste from the knife (2).

**Fig. 1b**



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Application Number  
EP 93 11 4083

## DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
X	US-A-3 508 460 (GOETTSCH) * column 1, line 30 - line 40; figures * ---	1,2	B26D7/20
A	EP-A-0 183 862 (PETER TEMMING AG) * abstract; figure 3 * ---	4	
X	US-A-4 685 363 (GERBER) * column 16, line 32 - line 64; figures 12-18 * ---	1,2	
A	GB-A-2 090 784 (GERBER GARMENT TECHNOLOGY INC.) * abstract; figures * ---	1	
X	IBM TECHNICAL DISCLOSURE BULLETIN vol. 23, no. 12, May 1981, NEW YORK US pages 5576 - 5577 SEELINGER 'SELF SHARPENING SLITTER' * the whole document * ---	5	
X	DE-A-23 11 505 (LEO S.P.A) * page 4, paragraph 3; figure * ---	5	
X	GB-A-2 124 523 (PAPER CONVERTING MACHINE COMPANY) * page 2, line 65 - page 3, line 25; figures * ---	5	B26D D06H
X	DE-A-19 15 895 (ÖRBO AKTIEBOLAG) * page 4, paragraph 2; figures * ---	6	
X	DE-C-38 17 945 (JOHANNES MENSCHNER MASCHINENFABRIK GMBH & CO KG) * column 2, line 52 - line 67; figure 1 * ---	6	
Y	US-A-2 796 933 (GELLEKE) * column 4, line 3 - line 6; figure 3 * ---	6	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 17 May 1994	Examiner Vaglianti, G
<div>CATEGORY OF CITED DOCUMENTS</div> <div><div>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</div><div>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons ----- &amp; : member of the same patent family, corresponding document</div></div>			

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## EUROPEAN SEARCH REPORT

Application Number  
EP 93 11 4083

### DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
Y	WO-A-92 02343 (S.A. JAC N.V.) * abstract; figures * ---	6	
A	WO-A-91 13733 (MARQUIP INC.) ---		
A	DE-C-217 176 (H. FÜLLNER) -----		
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 17 May 1994	Examiner Vaglianti, G
<b>CATEGORY OF CITED DOCUMENTS</b>			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons ..... & : member of the same patent family, corresponding document	

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### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid,  
namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions,  
namely:

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- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid,  
namely claims:
- ☐ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims,  
namely claims:



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#### LACK OF UNITY OF INVENTION A PRIORI

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1-4,7: rod shaped brush elements supporting a sheet travelling under a disc-shaped knife rotary cutter
2. Claim 5: Sharpening device for a disc-shaped knife rotary cutter
3. Claim 6: Lubricating and cleaning device for a disc-shaped knife rotary cutter

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